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(Photo by Walt Hudson)

Navy team marks Hawkeye 'excellent' for AEW mission

Although it's not the quickest gun in the Navy's air arsenal, the Grumman E-2C Hawkeye stands alone in chalking up an unmatched record in its dash from drawing board to Fleet operational use. The latest achievement: accolades from a Naval flight test crew following the E-2C's first Navy Preliminary Evaluation, completed about three weeks ago.

In evaluating the results of the NPE tests, E-2 Program Director Tom Guarino said the following assessments can be made.

- Reliability of the E-2C weapons system was excellent. Eight flights were scheduled for the NPE, and in each of the eight flights the Navy team met its mission objectives without any in-flight aborts due to equipment failure.
- During the NPE, the transition of a qualified E-2B operator to E-2C was accomplished with four weeks of training.
- Radar detection performance, both over water and over land, exceed specification requirements. (A-6 and A-4 aircraft were used as over-water targets and A-6 targets were used over land.)
- Performance of CAINS (Carrier Aircraft Inertial Navigation System) was excellent.
- Flexibility and display quality of operator consoles were judged to be very good.
- Automatic tracking was satisfactory for the level of software (computer programs) development provided; additional software work is scheduled in the areas of maneuvering, target tracking, and height processing.
- Maintenance actions on the aircraft were few and were accomplished by Grumman technicians.

All-Navy flight crew

In completing the flight test portion of the NPE, the Navy flight crew, headed by Lt. Tom Bunge, flew eight flights for a total of 39.2 hours, using two E-2Cs (M-1 and M-2). M-2 was used to evaluate over-water and over-land detection and tracking, while M-1 was used to evaluate the radar antenna pattern and navigation accuracy. The NPE, which started on January 31, was completed on schedule despite the loss of three flying days because of snow.

Summing up, in the team's words: "The E-2C systems evaluated exhibited excellent potential for the carrier-based airborne-early-warning and tactical control mission and are a significant improvement over comparable E-2A/B systems."

And that's important, both to the Navy and to Grumman. For the new Hawkeye, third in the E-2 family line, can outperform even its illustrious predecessors. Noteworthy improvements—a new over-land radar, updated computer, new radar displays, and a new inertial guidance system—add up to a far more capable Hawkeye.

Topped by a pancake-like radome, the E-2C can detect, identify, and track aircraft over land as well as over water—a vital contribution when U.S. surface units are operating near large land areas—and then act as a command post for intercept control.

Besides these two critical missions for the defense of the Fleet, the Hawkeye, in any weather conditions, can also:

- Vector strike aircraft to their targets
- Detect and track cruise missiles and surface vessels
- Act as communications relay link to distant aircraft
- Guide rescue craft to downed aircraft
- Act as air-traffic controller through desired corridors to provide collision avoidance

And during all of these activities, the Hawkeye's air crew can keep the Fleet commander instantly informed through data links with surface units.

Outstanding record

The E-2C flight development team has been racking up outstanding "marks" for over a year now, starting with the first flight of the E-2C in January 1971, one month ahead of schedule. Last June, the Defense Systems acquisition Review Council gave the Navy and Grumman a firm production "go" for the E-2C following an in-depth evaluation of the Hawkeye's new systems hardware. The "go," according

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'Turn on' F-14 in lighting review

A Navy review team headed by Capt. Dan McCormick, chief, Fighter Aircraft Branch, Naval Air Systems Command, has evaluated all F-14 lighting both under darkened conditions and during high ambient light conditions and has judged that, with some minor modifications, Tomcat is "right on."

The two-day lighting review, held at Point Mugu, was performed with aircraft No. 9. Point Mugu engineers and technicians, with the assistance of a Bethpage team, reconfigured the cockpit and re-positioned some of the exterior lights to reflect a production model.

Grumman and Point Mugu people also designed a new type cockpit hood that simulated darkened conditions. Fabricated with the assistance of Naval Air Systems parachute riggers, it provided Navy evaluators with the capability of reviewing the cockpit lighting in the light of day or the dark of night.

After a review during the first day, Tomcat 9 was moved outdoors and spotted for night evaluation of exterior lighting. On the second day, the aircraft was re-spotted for cockpit lighting evaluation under high ambient conditions at high noon.

On hand were Joe Smith, deputy Base Manager, Point Mugu, and Joe Rees, F-14 deputy Project Director, Bethpage.

Engineering tackling corrosion before it begins—in F-14 design

With the advent of the F-14 a corrosion-control effort was in full swing, anticipating rather than reacting on what seems an inevitable problem.

Of all the military services, the Navy is most concerned about the problem: their ships and planes are in the environment most conducive to corrosion—salt water and spray. It is that combination of moisture and oxygen that attacks materials and erodes them.

A good example of the effects is known by any one who lives near the sea shore and drives a car—or any one in a northern clime when snow removal is aided by spreading salt on the highway.

Grumman, in its proposal on the Tomcat program, suggested to the Navy that an organized approach to corrosion-control should begin at the earliest moment—the design stage. The rationale was simple: Why wait until corrosion showed up in Fleet aircraft?

That was Senior Vice President Grant Hedrick's idea, and the Navy realized its value. Hedrick assigned Emerson Fawkes to develop and manage the program. A Corrosion-Control Committee was set up, with one representative each from Engineering, Manufacturing, Production, Quality Control, and Reliability. In addition, there would be subcontractor representatives, as required.

In part, the charter read:

"It is not sufficient to establish a material call-out in early design without further regard to its implementation and capability. A complete control effort must include continual support surveillance into the production phase, flight test, and early service operations. In addition, corrosion control must be expanded to include all major subsystems and sub-contractor facilities. Corrosion-prone areas must be identified and corrected long before the aircraft is scheduled for Fleet deployment."

According to Vito Palombella, corrosion control engineer for the F-14 and chairman of the committee, "It used to be that 'make it to spec' was all that mattered. That meant that the real problem was identified after experience in the Fleet. What we're doing now is to examine ways to minimize corrosion starting with two questions: Is corrosion inherent in the design? What is truly adequate maintenance?"

Preventive measure

The first question is almost purely one of prevention. As Vito says, "We're looking for things that might cause problems later. With the cooperation of people on the committee, we tried to help make Tomcat a 'clean' aircraft, and the people in the design and fabrication areas were the ones who really did the job. For example, they tried to avoid using corrosion-prone materials; they tried to design for accessibility so that no hidden corners jeopardized maintainability; and they tried to put protective coatings on many interior surfaces as well as on the external, exposed surfaces. A good example of this kind of preventive maintenance is the wheel wells. Not only are they exposed, but so might be the two or three compartments back of the wells, so they were coated, too.

"And to make certain that others—our associate contractors and all team members — did the same sort of corrosion-prevention work the requirement was put into the contract."

Now, for the first time in the history of our naval aircraft, all portions of the aircraft are examined and evaluated from the standpoint of corrosion. Also, visits are made to contractor facilities, and each facility is required to have an engineer responsible for corrosion prevention procedures. And to tie the loop in Washington, there's a "Mr. Corrosion for NAVAIR," Sam Goldberg.

There's also a system of reviews as well as the regular meetings of the Corrosion Control Committee.

Revolutionary approach

In a way, what's being done in the control of corrosion on the Tomcat program is revolutionary. And Vito comments, "It's a vital program. And you know, it's too bad everyone—and especially each designer — doesn't get a chance to live aboard a carrier for a while. There's no substitute for real-world experience."

Tom Main, head of Materials and Processes, comments that "By imposing upon ourselves the F-14 corrosion-control program, we have focused, in one airplane, the lessons learned during more than three decades of designing and building aircraft to withstand the severe carrier-corrosion environment.

"We have in the F-14 the epitome of corrosion-resistant materials, corrosion-preventive finish systems, and corrosion-conscious design, which will make the F-14 the most corrosion-free aircraft in the Fleet."

Publications aiming at corrosion, too . . .

Attacking the problem differently is the Publications section of the Product Support Department, working under a Naval Air Systems Command study contract. It is trying to improve the likelihood of early detection of corrosion and to insure that corrective action is taken before serious structural damage occurs.

To do this, the Publications Operating/Inspection Data group has been setting up maintenance requirements cards for the S-2, C-1, and E-1 that will put corrosion inspection checks on a scheduled basis, similar to the preflight, daily, and calendar preventive maintenance checks performed on these aircraft.

The initial work presented a problem: The aircraft series to be studied were out of production. But from background information—and a one-day visit of an S-2E provided by VS-71, a naval reserve squadron from NAS at Lakehurst, N.J.—it became possible to locate corrosion-prone areas and to evaluate access provisions and drain holes.

The information gathered by the group's study will be evaluated by NAVAIR.

Top Marines visit Calverton

The new Assistant Commandant of the U.S. Marine Corps, Lt. Gen. Earl Anderson, accompanied by Maj. Gen. Paul Fontana and Brig. Gen. Thomas Miller, visited Calverton last week for a tour of production facilities and a program updating on the F-14, EA-6B, and A-6E. General Anderson is shown at right chatting with Don Brent, supervisor of Field Service representatives at the Marine Corps Air Station, Cherry Point, N.C., and above, General Anderson is briefed on the F-14 cockpit by Chief Test Pilot Chuck Sewell. Below, General Fontana (L), Commanding General, MCAS, Cherry Point, and General Miller, Assistant Commander, 2nd Marine Air Wing, Cherry Point, tour A-6 production line with Roger Busch (R) of Business Development and Pete Remington, A-6E Program manager.

(Photos by Ed Finnick)

Product Engineering saluted for $16 million in cost savings

When you're given a $5 million cost-reduction goal for the year, and you not only meet that objective but save more than three times as much, what can you do for an encore?

That's the dilemma—although a somewhat pleasant one—facing Vice President George Skurla and members of his Product Engineering team in 1972. But for the moment, at least, they're still accepting congratulations on their amazing savings record that not only led the entire Company in that category, but also earned them a special citation from President Bill Zarkowsky.

Total savings during 1971, reports cost-reduction director Joe Milillo, were $42,245,304— that's a $7 million improvemént over the previous year, and about $15 million over the Company-wide goal set for '71.

"Of that total figure, Product Engineering contributed $16,252,103," said Skurla, "and I'm really pleased that we saved about half of that—$8,261,716—through economies we made on the engineering portion of the F-14 Program."

And how about the goal for '72? "We hope to do as well as we did last year—maybe even better!"

'Everybody's business'

In presenting George Skurla with the special citation last week, Bill Zarkowsky pointed out that "Reducing costs is everybody's business. It must be a way of life for each one of us, every day of the year. We must **think** cost-reduction. An engineer, for example, must always consider what impact his design will have on material cost and the ability of manufacturing to produce it.

"A buyer, too, can have a critical impact on program costs as a result of pricing negotiations with contractors or suppliers, and production people must always try to implement the most practical, effective manufacturing methods to help reduce costs.

"It can be nothing less than a joint effort—after all, the ability of the Company to compete will certainly have an effect on each one of us. As a result of this year's savings, for instance, we were able to pass on savings of over $5 million to our customers. That's good for them, it's good for the Company, and because it helps make our jobs more secure, it's good for each one of us, too."

Special citation. President Bill Zarkowsky offers congratulations and a special plaque to Vice President George Skurla for Product Engineering's outstanding cost-reduction effort in 1971—over $16 million saved, more than half on the F-14 Program. (Photo by Fred Annette)

Look at composites on West Coast trek

Half a dozen Grummanites, led by Senior Vice President Grant Hedrick, were at the U.S. Air Force's West Coast Study Facility recently for "Composites Recast," to take a second look (the first had been "Composites Forecast") at progress in composites.

The AF/NASA/Industry program had three objectives, to assess (1) the state of the technology in advanced composite material, (2) actions necessary to insure effective and economical use of the technology, and (3) the future opportunities available to realize the potential of advanced composites.

Grumman's input was substantial. In addition to Hedrick, Grummanites taking part were Tom Main, head of Materials and Processes (who was chairman of the Manufacturing panel), Artie August, director of Advanced Development, George Lubin, staff consultant for non-metallics, Joe Ryan of Contracts, and Dick Hadcock, manager of Advanced Composites.

More on E-2C

(Continued from page 1)

to Program Director Tom Guarino, was "one of the shortest DSARC's in history."

All major components for the No. 1 production E-2C are on schedule, with delivery of these items to Calverton set for early May. The first E-2C fuselage was joined at Plant 36 last month, forward sections for aircraft No. 2 and 3 have been started, and more than 20,000 detailed parts have been produced for the first 11 production Hawkeyes.

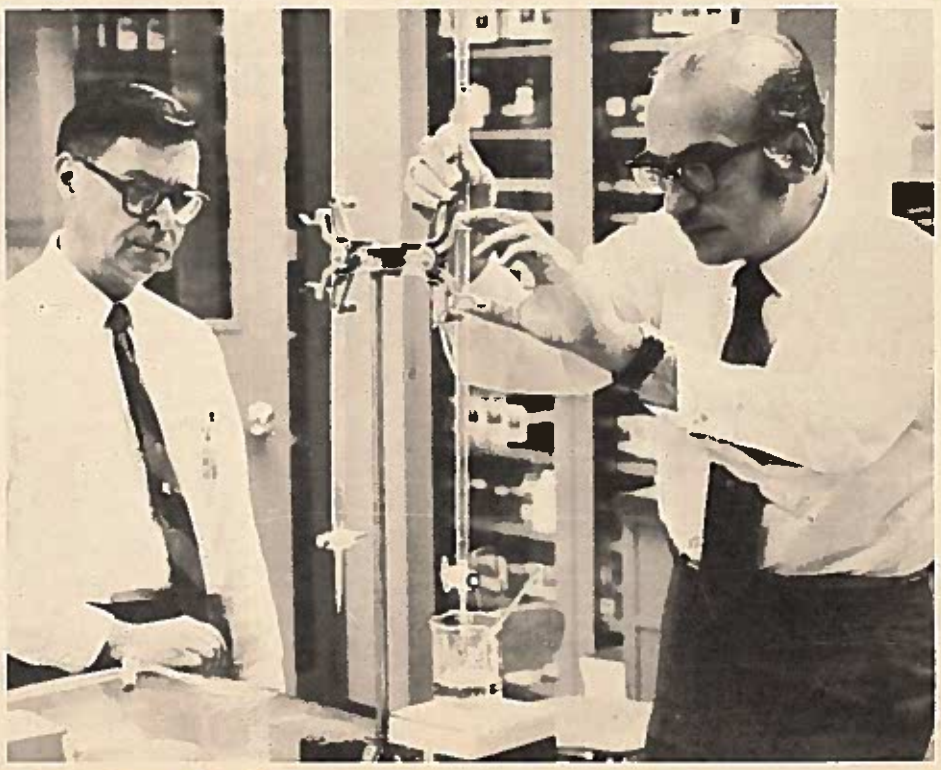
What more can be said? Well, Tom Guarino adds: "I want to compliment all of those from the Navy and Grumman involved in the NPE. The flights were well planned and well conducted; the team led by Lt. Tom Bunge was highly professional; and the low number of 'crabs' that occurred during the flight test period was unprecedented in weapons system testing of this type."

First environmental engineers near 'graduation'

"Outstanding in every way. They're professional," was Art Gilmore's comment last week as Grumman's Training & Development Department prepared to "graduate" 21 engineers from PRAESEE, a Program for Retraining Aerospace Engineers for Environmental Engineering. Gilmore, who is director of Corporate Training & Development, has stayed very close to this pilot effort.

President Richard Nixon laid the foundation for such retraining programs with his Technical Mobilization and Reemployment Program announced in April 1971. It was one answer to widespread unemployment in the aerospace industry.

PRAESEE was organized by Grumman and Manhattan College, sponsored by New York State, and funded by both New York State and the Federal Government. The intensive course ran from September 1971 to March 1972—26 busy weeks—and was taught by Grumman specialists and outside consultants. In a series of weekly seminars set up in November, representatives of consulting engineering firms and government agencies were invited to discuss environmental programs, given under Gilmore in Plant 39.



Opening the door. Grumman has joined with Federal and state governments in a Program for Retraining Aerospace Engineers for Environmental Engineering. Frank DiCuia (R), a PRAESEE student, conducts an experiment under tutelage of Robert Holden, Chem Lab instructor, Training & Development.

Diverse backgrounds

The students were chosen from 160 applicants with diverse backgrounds. Eleven were former Grumman employees. Ages range from 24 to 53.

Subjects included an introduction to Environmental Engineering, Chemistry, Hydrology, Microbiology, Instrumentation and Data Processing, and Water Supply and Water Treatment. The supply of good drinking water and the treatment of water waste are becoming increasingly important to residents of Long Island and other areas of high population density, Gilmore pointed out.

By last week five or six of the students had new jobs and others were "in various stages of negotiation," Gilmore said. While no guarantees of placement for the engineers were made, assistance has been given in helping them find jobs in this new and growing field of ecology.

Grumman Allied elects Loar Exec. V.P.; name Landon Controller

Robert F. Loar has been elected Executive Vice President of Grumman Allied Industries, Inc. The election of Loar, a former vice president and senior vice president of the Grumman Corporation subsidiary, was announced following a regular meeting February 16 of the Grumman Allied Industries Board of Directors.

On February 22, Robert G. Landon was appointed as Controller for Grumman Allied Industries, J.B.E. Olson Corporation, and Olson Bodies, Inc. Landon will continue to serve as Assistant Secretary of the Corporation.

Bob Loar came to Grumman in 1942 from Wall Street. He started as an internal auditor, and over the next 20 years served as head of Inventory Control, the Production Stockrooms and Warehouses, and supervisor of Materials before being shifted to Grumman Aerobilt Bodies (later Olson Bodies) in Athens, N. Y., as general manager.

Bob Loar

Bob Landon

Director of Allied

Loar continued to manage Aerobilt Bodies when Grumman Allied was formed in 1962, but he was also named Vice President and a Director of Grumman Allied. He returned to corporate headquarters in Garden City in 1964, and in 1965 was elected a Senior Vice President of the firm.

Bob Landon, a 1955 graduate of the Wharton School of Finance and Commerce, joined Grumman Allied in 1964 as plant controller for the Grumman Boats Division at Marathon, N. Y., and moved to corporate headquarters four years later.

Earlier, he had been associated with the National City Bank of Cleveland and with Smith, Kline & French Laboratories where he served in a number of financial areas, including investments and acquisitions.

Former Navy pilot

A Navy veteran (1949-53), Bob was a carrier-based pilot attached to VA-35, but these days he confines his "naval" pursuits to sailing, and, if time permits, he can still play a respectable game of golf.

Landon lives with his wife, Sally, and their two children, Geoffrey, 15, and Suzanne, 11, in Eaton's Neck.

Erecting new facility

Grumman Allied Industries, Inc., of Garden City made a turn-around in 1971 according to their year-end report on sales and earnings. Sales and other income for Grumman Allied for 1971 were $27,878,547, and net income was $605,729, or $.74 per share ($.72 per share fully diluted) after provision for Federal and state income taxes.

Last year (1970), sales and other income for Grumman Allied were $21,036,-182, but the corporation suffered a net loss of $9,809 for the 12-month period, after provision for Federal and state income taxes.

Grumman Allied is erecting a 100,000 square-foot plant in Montgomery, Pa., which will be used to assemble the Grumman Motorhome and the Grumman Modular Buildings. The first products to be fabricated at Montgomery are scheduled for delivery in July of '72.

Grumman Allied has eight other installations in the U.S. for fabricating metal boats, fiberglass yachts, aluminum truck bodies, and grey-iron castings.

Get grant for disposal system

Grumman has received a grant of $34,922 from the U.S. Environmental Protection Agency to develop a treatment system for fluoride waste disposal. It is the first time that Grumman has won a grant from the Agency.

Chris Stabler of Materials and Processes, program director for the proposal, emphasizes the significance of the work, remarking that the Company "would be particularly affected by the imposition of more restrictive and stringent standards relating to the disposal of fluoride wastes.

"Because of our location on Long Island, nearly all of our drinking water at Grumman comes from underground wells."

According to Tom Main, director of Materials and Processes, "Fluoride wastes come about through the industrial use of metal cleaning and chem milling and plating processes. Conversion coatings are used for protection from corrosion and they also assist in paint adhesion."

"We're aiming to meet, and then improve on, the U.S. Public Health Service's standard of having no more than one to one-and-a-half parts per million of fluoride drain into the earth," Stabler said.

He went on to say that the process he has in mind would be applicable to industrial uses—primary and secondary metal-working industry, microcircuitry in electronics, plating, and so on.

Tomcat buzzin' along

As of the second of this month, Grumman's Tomcats have flown 210 flights for 468.9 flight hours, and about six hours and 40 minutes of that time was spent in supersonic flight.

Nine Tomcats have been flown, five from Calverton, and four from Mugu. In addition, Tomcat 11 is scheduled to make its first flight soon.

Three of the four Tomcats Grumman has at Point Mugu — numbers 5, 6 and 9—have flown 37 flights for a total of 85.9 flight hours. Tomcat No. 4, the first to go to Mugu, has been bailed to Hughes Aircraft.

Credit Union meeting March 23

To encourage its members to attend the annual meeting of the Bethpage Aircraft Federal Credit Union, the CU Board of Directors decided to change the date from January to a (hopefully) more springlike March, and to offer a complimentary dinner and door prizes. If you are a shareholder (a "customer") of the Credit Union and did not receive a three-part green Notice of Annual Meeting, call the Credit Union, Ext. 9042, and get yourself included on the guest list.

The annual meeting is scheduled for Thursday, March 23, at Huntington Town House, Jericho Tpke., Huntington. The business meeting will start at 5:30 p.m., followed by dinner and door prizes at 6:30. Dinner capacity is limited and reservations must be accepted on a first-come, first-served basis. Originally it had been scheduled for Holiday Manor.

Replies must be in the Credit Union office, Bethpage, by March 15.

"This meeting should be of real interest to our shareholders. The Bethpage Aircraft Federal Credit Union is our own unique banking system, subject to the economics that are affecting society in general," said Tom Gill, CU president. "Shareholders should take an interest in the election of their Credit Union directors and should be aware of the distinct advantages in connection with both saving and borrowing at the Credit Union. Elections and other business will be conducted, and we hope to have a capacity turnout."

CALENDAR of events

Notice of events for period March 24 - Apr. 14 should reach Plane News by Tues., Apr. 4.

Amer. Soc. for Metals: Wed., March 15, 5:30 p.m. cocktails, 6:30 p.m. dinner, Nick Monte's Restaurant, Old Country Rd., Hicksville. Frank N. Longo, mgr. Coatings Engineering Sect. of Metco Inc., mtg. 8 p.m. $5.25 for dinenr. Joel Greenspan, Ext. 7351.

Chess Club: Tues., 5 p.m., Plt. 3 Cafe, tournament, games. Alex Ikonnikow, Ext. 7592.

Coin Club: Every Wed., 12:05 p.m., Plt. 25 Vendor Conf. Rms. Ken Hale, Ext. 3395.

Duplicate Bridge Club: Every Thurs., 5:45 p.m., Plt. 3 Cafe. S. Stone, Ext. 3652.

Fenc. Club: Mondays, 5-7 p.m., Plt. 30 Cafe, instruction in fenc. & competition. A. Chomas, Ext. 1926.

Fly. Club: Fri., March 10, 5 p.m., Plt. 28 Audit., reg. mtg. Stan Kalemaris, Ext. 7341.

Ski Club: Wed., March 15, Holiday Manor, Hicksville Rd., Bethpage. Bill Flynn, Ext. 1823.

Soc. of Aerospace Mat'l. & Process Engineers: Tues., March 14, Kings Grant Inn, Planview, Exit 46 LIE. Dr. Paul R. Hoffman, AVCO, on "Boron - Filament & Tape & Chem. Processes." C. Westerback, Ext. 2725.

Soc. of Logistics Engineers: Tues., March 14, 5:30 p.m., Old Country Manor, 244 Old Country Rd., Hicksville, cocktail/dinner mtg. Stewart Suttenberg, ILS Mgr., Sperry Gyroscope, on "Revised Navy 3M-Maint. & Mat'l. Mgmt. Sys.," Jack Beiderman, Ext. 2091.

Stamp Club (Bethpage): First 3 Wed. of ea. month, 5 p.m., Plt. 30 Cafe, swap, circuit bks., sales, auctions, discussion. Marty Harow, Ext. 9171.

Dinner meeting

On Wednesday, March 22, the AIAA and SFTE will hold a joint dinner meeting in Plant 30 Cafeteria. Cocktails at 6, dinner at 7. Fred Raymes, Space Shuttle Program deputy director, will speak on "Current State of the Space Shuttle Program and Where We Go from Here."

Here and there . . .

The Town of Huntington has established a Consumer Protection Board. Its scope includes such matters as deceptive trade practices; unconscionable trade practice; consumer goods, services, credit, and debts; and enforcement of the protection code. Inquiries should be directed to Box 75, Huntington, 11743.

Another one of our boys has made it! When the Irish and the Irish-for-a-day prance in the St. Patrick's Day parade on March 17, the Suffolk County aide to the Grand Marshal will be Lewis "Mike" McCormack, a tech writer on the F-14 program. He's the youngest man to hold the post.

And another one. Joe Meyer (C), who has the winning habit in Project Sterling suggestions, accepts $125 bond award from Phil Tartas, PS coordinator at Point Mugu, while Phil Biancone stands by to add his congratulations. It was Meyer's 10th winner.

He's looking for trouble

Joe Meyer doesn't take anything lightly—and anyone who has ever played golf with him knows that. Don't start counting your winnings, for example, until after the last putt has dropped; he battles you right down the line. And, apparently, Joe carries that same type of enthusiasm into the world of work.

Recently at Point Mugu, where he is chief trouble shooter on all maintenance priorities on the F-14 Tomcat, Meyer received $125 in U.S. Saving Bonds for an idea he had turned in two years earlier while he was attached to the Grumman team at Kennedy Space Center.

Early LM flights revealed a problem with the interfacing docking light switch between the Spacecraft LM Adapter (SLA) and the Lunar Module. It was caused by the unreliability of the "striker" located in the SLA which actuated the docking light switch in LM. And the situation was further aggravated since the docking light switch was practically inaccessible, making testing pretty difficult.

But Joe came up with a technique —using a depth micrometer and switch simulations to measure the depression of the switch — which solved the problem very well. It wasn't the first time he has earned a Project Sterling award; in his 24 years at Grumman, Meyer has earned 10 awards, but those are for ideas that he's turned in. He's put a couple of hundred others into use without benefit of "official" paperwork.

Look out for him; if you're sitting on the green with a sure par, he's likely to ram in a long putt for a bird and walk off with the money.

On the list?

If you've been bugged by wrong phone numbers, make sure that your name at least is listed correctly in the spring edition of the 1972 Grumman telephone directory. If your telephone number has been changed since the last edition of the directory, and a new card has **not** been sent in, please complete an EDPC 45B listing change card. (Got that? That's EDPC 45B!). Send it along to the Chief Operator, Plant 2. Filing a listing card is the **only** procedure that will insure a correct listing in the new directory. And if possible, your listing should be on a restricted number (inter-plant only, not outside) whenever possible.

You can help

Much has been written and said about the plight of retarded children in state schools and institutions, but seldom is there any hint of how a person can help alleviate the situation. Now there is. There is a shortage of attendants at state schools because of the recent job freeze, so volunteers are needed at the Suffolk State School at Melville to help teach severely retarded youngsters such things as self-feeding—especially on Sunday afternoons. Other volunteers are needed during the week to sort donated clothing. Here's an opportunity for high-school students or adults to have an effect on a tragic situation. For more information, call Mrs. Helen Murray, coordinator of volunteer services, 271-3900 (Ext. 251).

MASSTAPE on IEEE calendar

Participants in the International Convention and Exposition of IEEE (Institute of Electrical and Electronic Engineers), scheduled for the New York Hilton beginning Monday, March 20, will be given a briefing on Grumman Data Systems mass storage and retrieval system, MASSTAPE. Jay Haines, software manager on the program, will make the presentation, "MASSTAPE - A Systems Approach to Mass Storage," on Tuesday, March 21, as part of the session on Large Capacity Storage—Its Uses and Technology.

Preparing color video tapes for Navy F-14 training films

There are all kinds of approaches to teaching, but one of the most effective, some feel, is the humorous one. When the Navy began to make plans for air crew training for the F-14, it explained it wanted something that was not only instructional but also interesting and entertaining so its F-14 crews would be deriving the maximum information possible. Video tape in color, and sound slides gave Grumman the flexible approach that is now being solidified into a complete air crew training program, with serious photography helped along by animated cartoon characters. This month the first tape goes to Miramar, where the crews will be trained by Navy personnel.

Color video tapes are being produced by the Audio-Visual section of Presentations Services on five subjects thus far: "F-14 Ejection Seat," "In-Flight Re-Fueling," "Wing Sweep," "General Introduction to the Tomcat," and "Computerized Air-to-Ground Attack Systems." Others may be developed later.

Filming of actual air-to-air refueling at Calverton has been going on for the "In-Flight Refueling" teaching tape. In this instance, 16 mm color film is used, and it is then transferred to the standard one-inch color video tape. Ken Gruebel is manager of the Photo-TV section of Presentations Services.

The tapes are part of the Product Support Training package contracted for by the Navy. Sound slides for teaching other subjects also come within the province of Dean Swain, director of Integrated Logistics Support, and Don Wolf, Training manager in Product Support. The Navy's F-14 Air Crew Training Team, headed by Cdr. René (Sam) Leeds works closely with the Grumman writers, artists, and technicians in developing both of these teaching media.

Operational tips

The video tapes, versatile and readily corrected, are arranged and edited, and the materials gathered, by Dick Stinson, Charlie Sheets, Ray Mason, and George Wegler. Larry Flint of Flight Acceptance at Calverton is project man and Jim Bolwerk is the Grumman representative at Miramar. Commander Leeds and media man Lt. Kirk Strauss work together in presenting the training programs at Miramar after the Navy trainees have received their F-14 indoctrination training at Plant 39 in Bethpage.

And the whole purpose is to train the air crews so they know what to expect before they climb into the F-14. How to operate a hot new plane safely and efficiently is a responsibility made easier to understand by the colorful characters seen in situations before the actual ones occur.

Video in color. Strong pitch for Ejection Seat training comes from Bob Smyth (far R), deputy director of Flight Acceptance, who owes his life to this very seat. Charlie Sheets (2nd L) is operating camera in studio sequence. Ray Mason (L) and Dick Stinson (R) are in charge of lighting and production. (Photo by Fred Annette)

service milestones

35

25

George Batik, Alodine (2)
Victor Kosikowski, Spotweld (2)

30

William F. Szeglin, Prototype (1)
Francis Sloboda, Sub-Assem. Major (1)
Nickolaus J. Haus Jr., Sub-Assem. Major (1)
Peter P. Blaschuk, Drop Hammer (2)
James V. Salantri, Insp-Mech. (2)
John Carlsen, Engraving (3)
Julius J. Vnook, ESO (3)
Elving Josefsson, Wood Shop (5)
Joseph Lamberti Jr., P/S Struct. Mech Engg. (5)
Carroll C. Petrowski, Asst. Mgr. Maint. (6)
Harry V. Bartik, Flt. Dev./Oper. (7)
Nello J. Santelli, Spec. Tools & Methods (11)
Samuel E. Johnston, B/P Whses. (16)
Nicholas J. Cozza, Ship. & Spares Consol. (17)
Warren Shelderfer, Insp-Support Equip. (33)
Charles E. Mack Jr., director of Research (35)
Paul Guido, Final Assem. (36)
James T. Russeell, P/S A/C Site Mgmt. (75)
Albert G. Theobald, Final Assem. (77)
Earle H. Ketcham, P/S A/C Site Mgt. (80)
Francis R. Walton Jr., KSC Test Support (83)
Charles J. Moulis, P/S A/C Sys. Serv. (89)

Malcolm Dickerson, Tanks & Ducts (2)
Joseph C. Frisino, director of Prod. Mfg. Prop. (2)
Raymond P. Sullivan, Marshall. & Fin. Tool Ctl. (2)
Tracy T. Miller, Superintendent Maint. (2)
Randolph H. Williams, Wing Final Assem. (3)
Joseph Sturiale, Surfaces & Assem. (5)
Anthony Montalto, Surfaces & Assem. (5)
Thomas C. Adee, mgr. of Structural Sciences (5)
Stephen L. O'Brien, Instr. A/C Test (6)
Neal Edwards, Flt. Oper. (7)
Fred H. Roth, Templates (16)
Edward W. Rath, B/P Whses. (17)
Frank W. Goldsmith, Repair Ctl. (24)
John H. Jones, Insp-Mech. (27)
George F. Miezejewski, Plt. Protect. (27)
William Stolz, ESO (27)
Thomas E. Mason, Wire Prep (33)
Peter Katalo, Hull Assem. (36)
Ralph A. Kaiser, P/S A/C Sys. Serv. (81)

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Joseph J. Bowman, Pototype (1)
Vincent Bonomo, Hydraulics (1)
Philip Coyle, Hydraulics (1)
Vincent B. Mandaglio, Preflight Finals (1)
Andrew Bufalo, Instru. Plng. (1)
Alfred Cilento, F-14 Mfg. - Records & Des. (1)
Henry J. Ulak, F-14 Prod. Ctl. (1)

John Barberine, F-14 Mfg. (1)
Antonetta Ricci, Repro (1)
Raymond Gould, Conf. Data Mgt. (1)
John Szubzda, Router & Shear (2)
Frederick A. Knabbe, Spotweld (2)
Walter J. Hoffman, GSE Mech. (2)
Arthur E. Miller, GSE Mech. (2)
Edward Parisi, Ctr. Sect. (2)
Marino J. Di Chiara, Wing Inner Panel & Combo (2)
Roland Baril, Prop. Test (2)
Samuel J. Johnson, Out-of-Prod. Spares (2)
Joseph Findlay, Out-of-Prod. Spares (2)
Richard T. Friedel, Dispatch. WIP Pl. 2-3 (2)
Michael P. Smith, Dispatch. WIP Pl. 2-3 (2)
George J. Kikta, Plng. (2)
Richard E. Schneider, Jigs & Fix. (2)
William A. Bennett, Mach. Shop (2)
Albert Hlavac, Mach. Shop (2)
Vincent A. Gallo, Mach. Shop (2)
Erling Lindberg, Templates (2)
Robert H. Irwin, Jig Detail (2)
Kenneth H. Platt, Jig Detail (2)

John Stefaniw, Assem. Tool. (2)
Michael F. Lehr, Fluid & Mech. Tool. (2)
Christian M. Martin, Fluid & Mech. Tool. (2)
Leon M. Chetuck, Facil. Maint. (2)
William Weber, Router & Shear (3)
Daniel J. Sacco, Router & Shear (3)
Adam Berning, Press (3)
Christopher Hasenzahl, Press (3)
Donald F. Ketcham, Convent. Mach. (3)
Thomas Palmeri, Sma. Parts Fab (3)
Frederick G. Reisert, Sma. Parts Fab (3)
Cornelius Fredlund, Alodine, (3)
Cecil P. Bowers, Spotweld, (3)
Abe Black, Spotweld (3)
Thomas L. Alger Jr., Wing Final Assem. (3)
Larry A. Zinno, Honeycomb (3)
Barton Sikes, Mach. Oper. (3)
Hamilton Santos, Mach. Oper. (3)
Oscar H. Kritsberg, Forecasting (3)
John O'Shaughnessy, Static Test (5)
Morris Isaac, Ops. Anal. & Plng. Research (5)
Edward F. Schoenfeld, Adv. Aircraft Sys. (5)
Armand J. Affe, Legal & Secretary (5)
Claire Imrie, assoc. editor, Plane News (5)

Daniel F. Jackson, Instru. A/C Test (6)
George Boehle, Hydraulics (6)
Leon Jasinski, Avionics Inst. (6)
Frank M. Perry, Mfg. Test Plts. Mgt. & Staff (6)
Eugene V. Bagnall Sr., Plt. Stores (6)
Frank E. Tupper II, P/S Verif. & Prod. Support (6)
Nelson H. Champlin Jr., Recv. Insp. (6)
Nicholas J. Dukarm, Plt. Protect. (6)
Donald J. Bielins, Flt. Dev. (7)
Bruce O. Clayton, Mfg. Test Plt. Mgt. & Staff (7)
Loretta Gagne, Calverton Mgt. (7)
Guido Lo Dolce, Spec. Tools & Methods (11)
Harry Hennessy, Elect. Test (14)
William S. Ketcham, Prod. Ctl. (15)
James T. McManus, Prog. Mgmt. E-2 (15)
George J. Winzinger Jr., B/P Whses. (17)
Franklyn George, Invent. Ctl. (17)
James Saccardi, Trans-Oper. (20)
Douglas Morrell, Trans-Oper. (20)
Herbert W. Hollen, Crit. Mat'l. Ctl. (21)
George H. Lake Jr., Static Test (23)
Maximilian J. Zacher, Struct. Des. (25)
Roswell Chandler, Drafting (25)

(Continued on page 7)

M. Dickerson | J. C. Frisino | R. P. Sullivan | T. T. Miller | R. H. Williams

J. Sturiale | A. Montalto | T. C. Adee | S. L. O'Brien | N. Edwards

F. H. Roth | E. W. Rath | F. W. Goldsmith | J. J. Jones | G. F. Miezejewski | W. Stolz | T. E. Mason | P. Katalo | R. A. Kaiser

'Family' get together in Vietnam

During one of his tours of Army air bases in Vietnam recently, Field Service rep Paul McDermott ran into a member of the family, the Grumman "family" that is. He met "Chuck" Mulhearn, a crew chief of the Grumman OV-1D Mohawk with the 131st Military Intelligence Company (aerial surveillance). Mulhearn is the son of another "Chuck" Mulhearn, this one working in Critical Material Control, Plant 21.

Paul, who decided to record the moment for posterity (and also to send young Mulhearn's photo to his dad), is shown with "Chuck" Mulhearn (L) and Maj. Marty Davis, commanding officer of the 131st.

No horse opera here

If you've been anxious to try opera on for size, you can do so by travelling only a couple of miles to C. W. Post College in Brookville. Coming up next Saturday, March 18, is LaTosca. Starring are Teresa Apolei as Floria, Cesare Bardelli (formerly of the Metropolitan Opera Association) as Scarpia, Salvatore LiVigni (Venice, Parma, and Milano Opera Houses) as Mario, Louis Sgarro (Met) as Angelotti, and Charles Anthony (also of the Met) as Spoletta.

All seats are reserved. Discount tickets, which can be obtained at Employee Services Offices, offer a 20% reduction on the $12.50 and $10 tickets.

Next attraction: Cavalleria Rusticana and Pagliacci on April 8.

Auction at Grumman

Grumman will hold an auction of used surplus office and shop equipment March 24 and April 7 in Plant 29, Bethpage. The sale will be open to the public and will be advertised in Newsday, the Long Island Press, and Penny Saver. Grumman personnel will be able to participate if they wish, but on their own time, according to Harry Volz, deputy director of Personnel Services.

The two auctions will be conducted by Jim Graham Auction Company of West Palm Beach, Fla. They will be scheduled as follows:

Friday, March 24, 8-10 a.m., registration and inspection of material. Auctioning begins at 10 a.m. Office equipment, including manual and electric typewriters, tables, chairs, file cabinets, drawing boards.

Friday, April 7, 8-10 a.m., registration and inspection. Auctioning begins at 10. Electronic equipment and small machine tools.

The entrance to Plant 29 is immediately north of the Personnel Building, Plant 28, S. Oyster Bay Road.

Buyers must provide their own transportation for purchases.

And on TV, too

If you have a yen for the open road, tuning in to Channel 21 starting April 23 might provide you with the wheels. Heading the list of gifts and services to be "auctioned off" during the week of April 23 on Channel 21 is a fully-equipped Travel Mate Camper Trailer.

Other items already pledged are a color TV set, college and business courses, stereophonic headphones, etc.

Home viewers get in on the action by picking up a phone, dialing Channel 21, and placing a bid on any of the items as they are displayed. After the bids are validated, the merchandise or service goes to the highest bidder.

Watching their smoke

There's still time to register for the Smoke Watchers Course being held on Mondays at 5:15 p.m. in the Plant 28 auditorium. This Monday, March 13, the instructor will meet with all those potential "smoke watchers" to answer any questions they might have, and to explain the course in detail. Registration fee is $4, and the weekly fee is $2.50. If you have further questions, call the GAA, Ext. 2133.

Focus on space

On March 23, you'll be getting a little extra in your pay envelope—a message from Senior Vice President Joe Gavin citing the benefits of space technology. And if you carry that message to any Employee Services Office you can redeem it for two special bumper stickers: one reads 'America Needs Space to Grow,' the other bears the message, 'Grumman Space Shuttle.' Be on the lookout for these.

service milestones

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(Continued from page 6)

Joseph P. Gallo, Fbgl. (27)
Carl Adams, Sub-Assem. Major (27)
Thomas P. Keegan, Major Assem. (27)
Carl Maroth, Major Assem. (27)
John F. Jordan, Fuse. Join. (27)
Harold Kaufman, Mfg. Test Plts. Mgt. & Staff (27)
Lawrence J. McGovern, Rqmts. Plng. (30)
Rita C. Mathia, Facil. Admin. (30)
Charles N. Coppi, manager, Prog. Engg. (30)
John M. O'Donnell, Mat'l. Acctg. (30)
Richard H. Bowers, Mat'l. Acctg. (30)
Ralph E. Combes, Static Test (31)
Donald J. Marold, Elect. Fab. (33)
Milton D. Colby, Wire Prep. (33)
Stanley Wylyczenko, Flt. Avionics (33)
Francis J. Fox Jr., Method Elect. Tech Sys. (33)
Gerard Shields, Assem. Methods & Plng. (34)
Patrick J. Finnegan, P/S Site Supply (34)
Robert S. Demarest Jr., Wgt. Anal. (35)
Theodore A. Bellfield, Sub-Assem. (36)
Cosimo Franchino, Surfaces & Assem. (36)
Slawko S. Kociuruba, Surfaces & Assem. (36)
John M. McGarry, Router & Shear (37)
Archie T. Fowler, B/P Whses. (37)
Horton Carpenter, P/S Train. Proj. Mgrs. (39)
Anthony F. Baroody, MSC Mfg. Shops (52)
Robert B. Dowse, Distrib.-Mgr. (55)
Ralph W. Tebbetts Jr., Minor Assem. (55)
Thomas M. Lloyd, Fuse. Join. (55)
Harold C. White Jr., Mat'l. Ctl. (77)
Terenzio (Ted) Giannone, KSC Base Mgt. (83)
Dominick L. Negro, KSC Base Mgt. (83)
Alfred Chimenti, KSC QC (83)
James L. Comer Jr., QC Supplier (84)
Robert J. Romberg, P/S A/C Site Mgt. (87)

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Harold V. Haase, Facil. Maint. (1)
Frederick Berezuk, Struct. Des. (1)
George Castellano, Ctr. & Mech. (1)
John Aris, Displays (1)
George T. Steffens, Insp-Mech. (1)
Michael Caruso, Mach. Shop (2)
Joseph Walker, director of Prod. (2)
John H. Robedee, Mfg. Test Plts. Mgt. & Staff (2)
Richard Dillinger, Mfg. Cost Prop. (2)
Robert Leun, Methods Engg. (2)
John A. Barton, Jigs & Fix. (2)
Joseph Corbe, Form Block (2)
Brian J. Donovan, Jig Details (2)
Robert C. Carlson, Assem. Tool (2)
John Decastro, Present. Serv. (2)
Mario Franceschi, Honeycomb (3)
Genaro J. Paolillo, Mach. Oper. (3)
George A. Olsen, P/S Mech. Engg. Mgt. (4)
Sidney C. Kaufmann, P.S. Plng. (4)
Arthur V. Bierlein, Air Breathing Prop. (4)
John J. Flood, Flt. Transportation (4)
James D. Rauscher, Wood Shop (5)
Henry Jakimo, Ops Anal. & Plng. Research (5)
Gerald W. Tasker, Pwr. Plt. (6)
John M. Schwier, Preflight Finals (6)
Edward C. Thomsen Jr., Instru. Plng. (6)
William L. Barden, Plt. Stores (6)
Walter J. Broderick, Gvt. Mat'l. Ctl. (6)
Edward Jenkinson, Hydro-Mech (7)
Philip H. Fenderson, Airport Oper. (7)
John J. Kane, Flt. Data (7)
Jerome P. Farrell, Maint. Rearrange. (12)
Sonya J. Westerback, Chem. Engg. (12)
Robert G. Micich, Adv. Mat'l. & Process. Dev. (12)
Clifford Smith, Support Plans & Prop. (15)
Thomas M. Wolfson, P/S Sys. Anal. (15)
Allan R. Garnjost, Electro-Mech. (15)
Michael N. Dinger, Conf. Data Mgt. (15)
Anthony L. Bauer, Ship. Insp. (17)
Louis J. Waldeck, B/P Whses. (12)
Dorothy Chapter, Repro (25)
Daniel F. O'Brien, manager of Employment (28)
Victor P. Maiorana, ODD (28)
James P. Smith, Gen'l. Purch. (30)
Melvin B. Martin, Pricing (30)
John Rivara, Eqp. Engg. (30)
William J. Brynda, PT/Proj. Engg. (30)
Donald W. Diebel, Pwr. Plt. (31)
Jean Frayre, Elect. Fab. (33)
Harry R. Keeler, P/S Elect. Engg. (33)
Philip Gill, PPO (34)
Ernest Borysewicz, P/S Struct. Mech. Engg. (34)
John G. Burkert Jr., Engg. Admin. (34)
Marie C. Ruggio, Secy. Serv. (34)
Charles Flower, Oper. Plng. & Budget (34)
Katherine C. Erb, Prog. Mgt. EA-6B (34)
Michael Alberino, Maint. Rearrange. (35)
Ernestine S. De Fanis, Food Serv. (35)
Michael Falco, Sys. Sciences (35)
Philip H. Boyle Jr., Ctr. Sect. (36)
George O'Connell, Plt. Stores (36)
Otto H. Sauberg, Prof. Dev. Prog. (39)
Marian Braun, Paymaster (40)
Matthew W. Becker, Grumman Health Sys. (41)
John McCarthy, Mat'l. (55)
James Edwards, Flt. Oper. (75)
Robert Williams, Insp./QC (77)
Kenneth F. Kettenacker, KSC Mfg. Shops (83)

See tool storage, central cutting as first steps in Detail Parts plan

When Senior Vice President Corky Meyer became head of the Manufacturing areas, two of the problems confronting him were the need to centralize raw stock and tooling and to move raw material into and out of the plants in Bethpage. In a demand for increased efficiency and improved flow time, he appointed Brian Evans in 1969 to be Corporate Project manager of the Product Manufacturing aspects and handed him the task of organizing and carrying out a new, modern, computerized plan of manufacturing detail parts.

A Central Cutting Operation and Central Tool Storage Facility are two aspects of a major Detail Parts Manufacturing System costing $7 million and requiring four years for completion. The cutting operation has been established in Plants 37 and 17 in Bethpage, speeding sheet stock into, through, and out of these two principal cutting areas. Plant 17 receives and cuts extrusions, tubing, bar,, and plate. Sheet aluminum, steel, titanium, and rubber flow into the bigger Plant 37 for stocking and first cutting. Production Control monitors the work orders by electronic tracking.

More unusual, perhaps, is the year-old Central Tool Storage Facility for detail parts tooling, located in the former hangar area at the north end of Plant 2. A 25-foot ceiling makes possible the concentration of 300,000 tools stocked on shelves and cantilever racks rising up 21 feet from the floor. These permit quick response to requisitions for tools, minimize time on the floor, and aid in periodic maintenance. The range in weight from several ounces to three tons.

Such efficient use of floor space would not, of course, have been possible without the order-picking trucks that lift the operators and the castered cages to out-of-reach locations. The cages can hold a large number of tools, while the side-loader has arms that extend to lift the heavy dies and ease them to the floor.

Such tools, up to 12 feet in length, rest across several racks, which are spaced three feet apart on the center posts. The truck operator controls the forward and reverse travel of his truck and the elevation of his platform. He fills a long series of orders on each trip and then drops off his cageful of tools at a staging area. As many as 1,800 to 2,000 tools can be handled in a day. The night shift takes care of returning the used tools to their proper locations.

Higher and higher. Rudy Hardick (upper R) cuts bar stock in Plant 17 while Fred Cassari, operating order-picking truck (lower L), gets tool requests from Mike Oliva, supervisor of Central Storage & Retrieval, and of Tool area, Plant 2. Cab and cage are automatically lifted to high shelves. 'Snapper' Hoehn (far R) is using fork on side-loader truck to retrieve heavy die half way up. (Photos by Jim Wagner)

Crevoiserat creates pin jam-up with 246 in Syosset Mixed

There's still room at the top in the race for high game honors in the Hawkeye Mixed pin league, but if things don't come to a screeching halt soon, GAA will have to hand out mementoes to a crowd instead of a trophy to an individual winner. Vince Crevoiserat put in his bid to join the ranks recently as he threw a record-tying 246—and that put him right in step with Phil Barton, Tony Klobukowski, and Chet Everoski who have fired 246 themselves during the season to hold a small piece of the game record. Anyone for 247? Crevoiserat had a shot at high series, too, as his 246 carried him to 633, but it fell four sticks short of Tom Murtha's mark. Edna Jezewski etched her name in the record books with 214, while other highspots in recent weeks were Lita Klobukowski, 481; Roberta Calabria, 183; and Lee Newcombe, 499. . . . It's the season for records, apparently. Fred Gregory polished off the string mark in Rocket competition with 618 on games of 217, 200, and 201, but game laurels in the round went to Frank Pollio who had 225. Other Rocket readings: Dennie Gensinger, 206-569; Joe Whitney, 210-567; John Cortese, 202-565; Ed Wesche, 215-566.

Lone Star standout

Texans are noted for their tall tales, but some displaced Yankees are giving the gang in the Friendship Mixed bowling league at Houston something to talk about. In recent sessions, Larry Langan fired 236-652 and 237-633 while Dick Nelson's 563, Walt Kowalski's 560, and Ken Saxton's 238-557 were also prominent. And the women were socking the sticks, too, as Peggy Young threw 211 and Lucille Donahue put together 204-523. . . . It was a light night for the Masters, with Fred Skirde's 224-592, Dick Spalding's 794, and Sid Smith's 770 the top marks in four-game sets.

The pins were flying in Aerospace action as Dave Evans and George Ulrich helped re-write part of the record book. Evans boosted the series record by six sticks to 619 on 213 and 226 games, while Ulrich shattered the game mark with 254 and nearly gained a tie for series honors, too, with 618. Others in the glow were: George Fowler, 203-228-597, and Harry Trueman, 230-562. . . . Black play featured Walt Stehlin's 224-588, John Stephens's 573, Dennis Henry's 221-569; and Carmen Vitale's 243-567.

It's no coincidence that Bob Nielsen and the Sterling Four are both leading the Red league in the individual and team standings—after all, Nielsen does hold one of the top averages in the league besides owning high game and series records of 265-653. And the way things are working out, there's a good chance both Nielsen and the Sterling Four will still be on top at the end of the season. Recently, Ray Sutton and Joe Glasser had a go at Nielsen's scalp . . . er, crown . . . but they weren't any more successful than any of the other Red pretenders this year. Glasser came through with a strong 205-208-233 for a 646 while Sutton fired a 248 in his 578 string. Other standouts included Hal Brower, 236-625; George Eyring (another of the Sterling Four) 578; Nielsen, 201-203-601; and Ted Martines, 234-584.

Smith hits 646

It proved to be no more than a scare, too, for the leaders in the Trader loop at Oscar's. This time the bombers were Kenny John Smith, who forged 646 on 209, 235, and 202, and Charlie Gosline, whose 246 hoisted his total to 580. Trader gleanings included Bob Washington's 210-212-207-629, Bill Lamm's 214-207-620, George Slavik's 208-224-604; Tom Wright's 235-596; and Dom Sanson's 207-215-582. . . . Skip Hraban didn't miss, though. He shattered the high-game record in the Classic loop with 247, added 219, and finished with 619 for the night, while Ted Lohse registered 615 with highs of 209 and 215.

Bob Dudonis shot 211-201-210-609 but he had to take a back seat to Hank Burkhardt's 220-227-636 in recent classified action. The following week Bob came right back with 203-205-211 for 619 to head the league. Rounding out the high efforts were Jerry Rainford's 202-245-607 and 201-202-574, Leo Dirheimer's 233-593, Sam Dedora's 212-219-610, and Bob Ingram's 210-571. . . . Art Lih hit 223-601 in the Hellcat loop to outpace Ike Washington's 212-568; Bob Herz's 559, and Sal Minardi's 221-550. . . . In the Owl circuit, Ken Lent fired 248-621, Rudy Dunkley, 226-603; John Harms, 214-610; and Bill Buchman, 222.

Bob Cozzette is at it again in Century Mixed play, this time raising his own series mark to 643 on games of 204, 202, and 237. Ruth Finno and Marilyn Cozzette hit 518, while in an earlier round, Bill Gentzlinger shot 210, Marilyn hit 210-503; Bob, 570; Jake Bussolini, 203-556; and Barbara Evans, 498.

Malandro fires 643 in classic

Nick Malandro fired 222 and 253 games and finished with a sparkling 643, but Grumamn could earn no better than third place following play in the first round of the L.I. Industrial men's pin classic. Malandro had to be satisfied with runner-up spot to John Koehler of Newsday who shot 255-664 to take the lead for individual honors.

With Ben Plawski contributing 202-217-594, Dave Evans, 201-571, Ernie Jenkins, 521, and Fred Skirde, 513, the Grumman varsity totaled 2,842 in the three-game set, and now trail Pan American by 82 sticks. Newsday is second with 2,922, A.M.F. is fourth with a 2,822 total, and A.I.L. is fifth with 2,815.

Sixteen teams are entered in the L.I. Industrial tournament, an annual event sponsored by Grumman, with the team title decided by total pinfall for 12 games. Action continues tomorrow night, Saturday, March 11, starting at 8 p.m. at Mid Isle Lanes in Hempstead, and on March 18 and 25.

Intruders look to '72

What turns a national softball championship team into an also-ran? That question has been puzzling members of the Intruder slow-pitch team since the squad captured the national industrial title about four years ago.

The Intruders haven't been without honors though. Last year, they finished second in three major tournaments: East Coast Invitational, Richmond Invitational, Metro Industrial. But in 1972, manager Jack Keane hopes to find the winning combination again for the big one: the national industrial tournament that is scheduled for Providence, R.I., in September.

How does he expect to do it? For a starter, Jack hopes to get a heckuva big turnout when he calls practice for the Intruders in a couple of weeks. "All positions are open," Jack says. "Last year four men new to the team broke into the starting lineup, and this year we'll follow that philosophy: the best men play."

So if you think you can help bring that championship back to Grumman, start getting yourself in shape; and when the practice dates appear in the next issue of Plane News, follow Keane's request: "Come on out."

Rice paces A squad to L.I. pistol win

The Grumman As are climbing close to the .500 mark again in the expert division of the L.I. Industrial pistol league, and it took a standout 284 by Dave Rice to get them near that break-even point. Rice displayed his hot hand during a 1,053-1,044 win over Kollsman, a match that was also marked by Bob Bergeman's 264 and Ron Hughes' 264.

Hank Chau of the P team was also on target—but his 277 and 273 both came in losing engagements to Sperry, 1,005-1,091, and Pan Am B, 1,053-1,085. Other Grumman scores included Phil Boehm's 275 and Ron Trenkner's 272 against Pan Am, and Trenker's 260 and Nick Evangelides' 253 against Sperry.

In another expert match, Al Berka fired 276, Art McKee hit 271, Roger Seybel, 263, and Greg Criscione, 254, as the Grumman D squad outgunned Kollsman, 1,064-1,008.

In the sharpshooter division of the Industrial circuit, Hal Saltzman registered 254 to lead the B team to a 974-917 win over the Es. Tom Tavitian's 252 paced the losers.

Owl tee league

In less than a month, the Bethpage Nite Owl golf league will tee off, with play scheduled to start on Monday, April 3, at 7 a.m. If you're an Owl and want to play this season, contact Bob Terry, Ext. 84245, for a berth in the loop.

Bartlett scores 30 for Spoilers

If there were any doubt as to the Spoilers' claim to being the top team in the Wednesday after-hours basketball loop, there isn't anymore. The Spoilers boosted their league record to 12-1 recently as they ran over Propulsion, 97-62, on the hot shooting of Ron Bartlett, Hal Manaskie, and Jim Cruthers.

Victory is sweet, and this one was particularly sweet to the Spoilers since Propulsion had handed them their only loss of the season in an earlier meeting. But this time it was different, decidedly so. With Bartlett scoring 30 points and Manaskie and Cruthers adding 28 and 22, the defending champs ran up a 51-29 half-time lead, then poured it on to gain their 97-62 triumph.

Earlier, the Supporters were the ones to get trampled by the Spoilers—the score was 101-50—as Cliff Sherman hit for 24 points and Wes Douglas canned 23.

Before Propulsion ran head on into the Spoilers — and bounced back, the team had accumulated a modest winning streak of five in the hoop circuit, with one of those victories a surprising 70-62 win over the Spoilers. Bob Schmidt netted 20 points in that engagement, while Lee Gendron contributed 16, George Fields, 11, and John Garrett, 10. For the losers, Cruthers hit for 20 points and Bartlett added 17.

Among their other wins, Propulsion listed decisions over the Supporters, 85-58; Tomcats, 95-65; Supporters, 73-69; and Tomcats, 80-65. High-scoring efforts in those contests were contributed by Garrett, 22, and Gendron, 19, against the Supporters, with John Sterrantino of the losers hitting for 21; against the Tomcats, Schmidt scored 26, Garrett, 22, and Gendron, 18, while John Bailey had 17 for the 'Cats. Schmidt's 31 points and Gendron's 23 helped Propulsion edge the Supporters as Mike Mole tried to keep his team in the running with 29 points.

Newcomers sprint

As playing manager of the Newcomers in the Thursday after-hours league, Gendron has guided his club to an 11-2 mark at last report. Three recent victories—86-78 over the Hustlers, 102-84 over the Digits, and 111-62 over the Druids — give evidence to just how strong the Newcomers are in the league.

Vince Clerico clicked for 30 points to give the defending champs their victory over the Druids while Marty Dewey, 20, Al Bauer, 22, and Gendron, 18, were providing ample scoring support. Mike Forman netted 28 points for the losers.

Against the Digits, Frank Quarto and Ed Krol proved to be prolific bombers, too, as they hit for 29 and 28 points, respectively. John Bell had 27 points for the Digits.

In a tight one with the Hustlers (who had knocked them off earlier this season), the Newcomers' Ed Krol and Marty Dewey hit for 21 points each, with Doug Keuling and Gendron adding 17 and 15, to squeeze out an 86-78 win. Jim Cruthers of the losers had 20 in that contest, and he got help from Bill Foote, 16, and Bob Hambrecht, 15.

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For Rent

HOUSE: Coram, 2 bdrm., bus. couple or couple w/1 child, $175/mo., util. not incl., avail. 3/15. 732-9074, after 5 p.m.

HOUSE: Pocono Mts., 2 bdrm., access. to pools, boats, 15 min. to Bushkill Falls. LI 1-5177.

ROOM: Furn., bath, TV. 798-6444.

APT.: Hicksville, 3 rm., nr. all facil. WE 1-0699.

ROOM: Furn., nr. shops & serv., & Grumman, sep. heat zone, linens & desk, gent. pref. MY 4-5814.

TRLR.: Hdtp. camper, slps 7, gas stove, sink, refrig, dinette, avail. Easter wk. & after. HA 7-7344.

APT.: 2 bdrm., lrg. liv. rm., din. rm., kit., all rm., new. carpet., new stove & refrig., pool & playgrnd., avail., Apr., May or June, reason. 731-3083.

APT.: 4 rm. grnd. fl., pvt. home, dishwash., wash. mach., dryer, gar., pvt. patio, util. paid. 293-8347.

ROOM: Bethpage, nr. Grumman plt., pvt. ent., gent. pref., reason. 822-3819.

ROOM: Furn. bdrm., gent., pvt. ent., shart bath w/gent., nr. Grumman. WE 5-1719, after 4:30.

SUMMER COTTAGE: Fully furn., Great So. Bay, Mastic Bch., by wk. or mo. 281-5833.

TENT TRLR.: Slps 5, ice box, sink, tbl., chrs., $25/wkend., $50/wk. 724-4766, after 5 p.m.

APT.: 4 rm., air cond., Bayport, sub-lease, $205/mo. 665-2921, after 5 p.m.

For Adoption

PUPPIES: 2 fem., 1 male, mix. breed, ½ Labrador retriever. PY 8-3668.

Wanted

TRUMPET: & music std., in good cond. 581-7840.

ROOMS: 4 or 5, Ozone Pk. area. 212 VI 6-8262.

SHOP MANUAL: '63 Chevy. 724-1958.

HYD. JACK: Service sta. type. 543-7097.

OUTBD.: Sma. Seagull, 2-3 hp pref., or other make, gd. cond. CH 9-6229.

AMX: 68-70, pref. bdy. only. JU 5-8992.

CAPT. CHRS.: 6, hvy, sol. maple. JU 7-4176.

APT.: Nassau pref., 3 or 4 rm., $150; yg. couple & baby. 623-0211.

AUTO PARTS: Pre-'64 Chevy rear end third member 3.70 gear ratio w/posi. 269-6928.

CAR: 6 cyl., '65-'68 Nova, Valiant or Dart, R&H, pwr. steer., auto., good cond., orig. owner. PY 6-3887, after 5 p.m.

PIANO: Spinet, gd. cond., reason. 581-1885, evgs.

DOCKAGE: For 25 ft. boat, Babylon, Bay Shore area. 586-6258, after 5 p.m.

SCRIBE: Used for ice skating. 868-9039, after 6 p.m.

APT.: 3½ rm., bdrm., kit., liv. rm. & bath, Levittown, Bethpage, Hicksville area, nr. 4/15. Susan Drapeau, Ext. 3934.

SCUBA GEAR: Inc. air tank. 785-6063.

HOUSE: 3 bdrm., or 3 bdrm. apt., low. fl. pref., 2 child., will sign 3 yr. lease, 6/1 or 7/1 occup. Joseph Attard, Ext. 87341.

APT.: 1 bdrm. or sma. house Bethpg, approx. 5/15. 822-6742.

ROOMMATE: Man share house w/2 bachelors, pvt. bdrm., pvt. bath, liv. rm., din. rm. & kit., dish wash., wash. mach, dryer, util. pd. 293-8347.

MOTOR: 4-5 hp outbd. w/shift ctrl., lg. shaft, or modify for 5 in. long shaft. LI 1-5407.

HOUSE: 3 or 4 bdrm., Bethpage. 234-0044.

TWIN BABY STROLLER: Front & bk., gd. cond., reason. 485-2296.

APT.: Bethpage or vic., 3 rm. or studio w/bath & kit., for eld. woman. 692-2738, after 5 p.m.

CARPENTRY TOOLS: For needy spec. class sch. child., 8-12 yr. old. JU 1-3463.

RIFLE: Garand M1 or carbine. LT 9-1820.

Ride Wanted

PLT. 30: to Huntington Vill.. W. Shore Rd., Century Bowl Alley or Halesite, Mon. thru Fri., 5 p.m. HA 1-5766.

PATCHOGUE: To Plt. 3, 7:30-4 p.m. 289-4431.

Car Pool

BETHPAGE: Wantagh Ave. vic. to Plt. 34 complex, 8-4:30 p.m., or occas. ride. Gene Marquardt, Ext. 87512.

For Sale

JEEP: '66 Wagoneer, V-8, 327, 4-whl. drive, 4-dr., snow plow, elec., pwr. steer. & bks., R&H, hydro, $2,200. 586-6406.

CAMPER: '71 VW, pop-up tp., 28,000 mi., orig. owner, ask. $3,500. 924-6932, after 6 p.m.

SUNBEAM ALPINE: 2, '62, 1 gd. for parts, 1 gd. mech. cond., 10,000 mi. on rebit. '64 eng., $225/both. 265-3463.

BUICK: '69 Spec. Deluxe, 2-dr. sed., 28,000 mi., V-8, snows & rims, pwr. steer., auto., antique gold, $1,400. 735-0176, after 5 p.m.

HONDA: '66, 90, 500 mi., $150; also new bumper racks, $15. 781-3379.

CHOPPER: Harley Davidson, 10 in. ext. on springer front end, Tillotson cork, Sifton cam, MC corp. hds. & jags, 80 c.i.d., 1,300 cc, new transmission, chrome, cust., etc., ask. $2,500. CH 9-4670.

TIRES: 2 Goodyear pwr. cush. w/w, 6.95x14, mtd. on Plymouth rims, $30. 928-2979.

RIMS: 2, 14 in. Pontiac, $10. 928-2366.

HOUSE: Plainview, Wash. Ave. vic., 3 bdrm. hill tp. ranch, ctr. hall, liv. rm. w/firepl., formal din. rm., lrg. eat-in-kit., lndry., panel. den, 2½ car gar., patio, carpet., all appli., 8 yr., xtras, ask $56,000. 692-2738, after 5 p.m.

For Sale

MISC.: Fender bassman amp, 175 w, 2, 12 in. spkrs., 3 yr., $200; Klira violin shaped bass guitar, $75; Shure mike w/std., ask. $25. FL 2-1919.

TKTS.: 2, Susannah @ Lincoln Ctr. NYC Opera Co. Sat. evg., 4/1, 1st row orch., $7.95/ea. 484-4096, after 5 p.m.

MISC.: Bev. bar, 4.5x3.6x1.6 mosaic tp., 2 grn. vinyl round stools, $80. 271-7097.

ELEC. WORKSHOP: Heathkit deluxe, electronic exp. set, lesson guides, assem., $12. 751-1256.

HOUSE: Freeport waterfront, 3 bdrm. ranch, 2 bath, alum. sid., fully lndscpd., all appli., ask. $39,500. TN 8-4237.

HOUSE: Levitt 3 bdrm. ranch, firepl., o'sz. gar., nr. transport. & shops, $28,500. Charles Crofts, Ext. 57-877.

HOUSE: Stony Brook, Strathmore B. Buckingham ranch, 3 bdrm., 2 bath, gar., din. rm., liv. rm. w/firepl., lrg. eat-in-kit., util. rm., 15x21 patio w/pergola, 6 GE appli., wood beam ceil, w-w, s-s, ven. blds., 1/3 wood. lndscpd. acre, sewers, $38,000, prin. appt. only. 751-3485, after 6 p.m.

HOUSE: Plainview, 3 bdrm. ranch, 2 bath, sunken liv. rm., formal din. rm., new appli., encl. porch, fenc. yd., fin. bsmt., gar., $37,000. 433-7524.

For Sale

REVEL CRAFT: '61, 19 ft. hdtp., curt., canv., new uphol., 1, 6-gal. gas tank, cradle, no motor, $350. HA 3-5399.

BOAT: 19 ft. Barbour lapstrake, side plywood btm., 75 hp Evinrude outbd., 20 gal. tank, comp. Navy tp., side curt., fish well, xtras, ask. $575. 473-6790, after 2 p.m.

BOAT: 14 ft. fbgl. Owens, 45 hp Chrysler motor, trlr. HA 7-0245.

BOAT: '64 Glasspar, 16 ft. fbgl., '64 Johnson 40 hp elec. start., '67 tilt trlr., Navy tp., fully equip., $995. 888-1167.

DINGHY: '70, 7 ft. fbgl., '71, 2 hp Evinrude outbd., $225/both. 475-7181.

SAILBOAT: '60 Blue Jay w/spinnaker, '70 trlr., xtras, rdy. to go, $600. 785-6289.

BOAT: 18 ft. West Wind, used 40 hrs., 60 hp Johnson, Sea Lion trlr., xtras, $2,500. WE 8-1580.

BOAT: '69, 16 ft. Woodson, '71, 50 hp Mercury, elec. bilge & start., 18 gal. gas tank, gauge, xtras, $1,900. 221-6678.

BOAT: 16 ft. '57 Thompson, 33 hp Johnson, '65 Little Dude trlr., 2 tanks, xtras, $375. 931-4614, after 5 p.m.

CERAMIC MOLDS: By Atlantic, Holland, Duncan, Whitehorse, others; L&L kiln, 23 in. wide 27 in. deep w/auto. timer. 543-4116.

TV TEST EQUIP.: Triggered sweep oscilloscope, vac. tube volt., Eico, TV color gen., tube tester. 727-7831.

TAPE RECORD: Prof., 2-spd., xtra tapes. 694-3203.

WATER PUMPS: Marine Jabsco, new, 1 in., $40, ½ in., $20. MO 9-0690.

WATER PUMP: Shallow well 1/3 hp Gould, 20 gal. tank, $30. AT 6-8482, after 6 p.m.

CHRS.: 4 wood. kit., $25. 588-6364.

BELT MASSAGER: McGraw-Edison W6982R, ask. $25. PY 6-9591.

STEREO PW. AMP.: & Pre-amp, G.E. Brute 70, 140w R.M.S./70w, R.M.S. per channel, peek pwr. 400w @ 8 ohms, Dyna stereo pre-amp., mod. SAX-3, for stereo & guitar mike comb., $285. 671-4228.

TRAIN SET: HO gauge, roll. stock & access., $100. 731-5610.

FLOWER POTS: Assort. sz., clay & plastic, $100. AT 9-3018.

AMP.: Traynor bass, YBA-2, 85w, 2 channels, cov. & casters, $90. 587-4413.

HOUSE: Commack, 3 bdrm, din. rm., eat-in-kit., s-s, fenc. ¼ acre, fin. bsmt. w/poss. 4th bdrm., carpet, appli., nr. all pkwys, 5¼% mtge. take over avail., ask. $34,990.

BUNGALOW: Rocky Pt., 4 rm. summer, screen porch, 100x100, corner, wlk. to bch. & shops, trees, $16,000. 785-3765.

FREEZER: Sears 15.8 cu. ft. std. up, $125. 822-7838.

PIANO: Upright w/bench, gd. for beginner, $50. 226-7238.

PUPPIES: Labrador retriever, AKC reg., hunt. & champ lines. 667-6547, after 6 p.m.

SCHNAUZER: Fem., spayed, gd. w/child., housebkn., 2 yr., best offer. 979-0259.

POODLES: Toy, silver, AKC reg., champ blood lines, male & fem. 935-4746.

GERM. SHEP.: Fem., 7 mo., silver & blk., shots, AKC reg., best offer. 747-7042.

MG: '69 Midget MK II sport car, conv. tp., Tonneau cov., wire whls., 4 new radial Michelin tires, new front disc pads, radio, 4-spd., ask. $900. John Hoimes, Ext. 2741.

BUICK: '65 Wag., std., V-6, 2 new snows & rims, $325. 433-3119, after 5 p.m.

RAMBLER: '61, 4-dr., 6 cyl., std., $125. SU 1-6251, after 6 p.m.

GRAND PRIX: '67 conv., blk./gold bronze, pwr. steer. & bks., bkt. seats, fact. air, 425 hp, 8 cyl., auto., all new tires inc. snows, $1,200 or best offer. Lynne Miller, Ext. 1653.

DODGE: '66 Charger, ask. $900; manual add. mach., $15. PE 5-2095.

DATSUN: 2000, 5-spd., conv., lof mi., radials, 4 cyl., ohc, $2,150. TU 8-0165, bet. 6-10 p.m.

STA. WAG.: '67 Ford, 4-dr., auto., 6 cyl., pwr. steer., snows & whls., new exh. sys., batt., etc., $800. 589-3789.

CHEVROLET: '67 Bel Air, 4-dr. sed., pwr. glide, 8 cyl., R&H, $725. JU 1-6704.

FIAT: '68, 850 mod., $975. 751-9588.

MAVERICK: '70, 2-drk., drk. blue, blk. vinyl int., big 6, auto., R&H, w/w snows, $1,195. JU 7-3426.

MGM: '71, Midget, red conv., 8,000 mi., 4-spd. stick, $1,950. AT 6-8482, after 6 p.m.

PICKUP: '68 Dodge ½ ton, Fleetside, std., 6 cyl., med. mi. 941-4758, after 6 p.m.

KIT. SET: Tbl. & 4 chrs., $30. JU 1-3125.

For Sale

MUSTANG: '65 Fastback, 289 c.i., 8 cyl., air cond., new snows, auto., $800. 694-5251.

YAMAHA: '69, IDS-5, 250cc, spares, tires, whls., sma. parts, $400. 269-4245.

SUZUKI: M12, 50cc eng., 900 mi., $225; 2 helmets, $10/ea. Charles Kirschen, Ext. 9132.

ENG.: '68 VW, 53 hp, comp. rebit. w/new crankshaft & pistons, $225/instal. 273-6239.

TRAVEL TRLR.: '69 Tag-1-long, 14 ft. self cont., slps. 6, xtras, $1,250. 281-8063.

KIT/DIN. SET: Formica tp., 4 chrs., $86. 938-6140.

MISC.: Wal. dual or king sz. hdbd.; cust. dual or king sz. bdspread, off wh. & gold, lined, best offer. 433-9842.

MISC.: 16 ft. Trojan boat w/75 hp motor, trlr. & cov., $600; dinette, formica, buffet, china & oval tbl., $185; Deming deep well pump, $25; fix. & mobile ham sta., antique AC Atwater Kent radio, $35. 796-0617, after 6 p.m.

SOFA: 3 pc. sec., mod., blue, $150. 437-4694.

TBL.: 2 dwr. col. pine end., new., $65. 665-0875, after 6 p.m.

KIT. SET: 36 in. round, wh. formica tbl. w/4 wh. chrs., $30. PY 6-8687.

STEREO: 44 in. Webcor, maple cab. cons., 4-spd. phono, AM-FM tuner, $100. 543-8743.

LOVE SEAT FRAME: Victorian, wal., $20. WE 1-0691.

DIN. RM. SET: 44x65 in. tbl. opens to 99 in. w/2 leaves, no-mar-fin., inlaid wood, pads incl., 6 hi-bk. chrs., approx. 1 yr., ask. $425. Al Margarita, Ext. 9548.

MISC.: Couch/bd. comb. & arm chr., maple, both $25; Bilt-rite carr., gold, fold. type, $30. 825-6257.

RUG: 9x12 shag, mod. design, gold, rust, brown, 5 mo. 667-0128, after 6 p.m.

BABY CARR.: Bilt-rite coachette, ask. $20. 249-4083.

CRIB: Col., mat. incl., ask. $75. SU 1-3883.

FURN: Lullaby wh. prov. canopy crib & match. dbl. dress., Bilt-rite Pk. Ave. navy blue coach carr., make reason. offer. 669-9022.

SAILBOAT: 17 ft. fbgl. Thistle 1460, sloop, alum. mast, full rac. equip., sails, trlr., $1,275; new North main & jib, $150. 289-4863.

SAILBOAT: 24x18x7x2.6 Daysailer, fast ballast., keel/ctr. boarder, comp. rebit. & wood. down in '68, main, jib & spinnaker, wet stored, 5 hp Seagull, $1,250. 669-1715.

PA SYS.: Bogen 100w Challenger, 2 col., 8-10 in. spkrs., cov. incl., $240. 731-2963.

MISC.: 2 comp. 5 channel radio ctrl. sys., $250; 1 sys. in plane, rdy. to fly, $200; 1 sys., $150. 931-5146.

CAMERA EQUIP.: Leica mod. IIIC, 35 mm rangefinder w/50 mm Elmar f3.5 lens, case, $75; Kodak Cavalcade slide proj. w/f2.8 lens, fully auto. w/remote ctrl., case, 7 trays, $75. 433-4826.

POLAROID: Mod. 320, used once, 538 flash attach., 2 pkgs., flash bulbs, reason. 293-7710, after 5 p.m.

CAMERA: Yashica Atoron sub-mini w/blt. in exp. meter, case, key chain, flash gun, filt. set, instructions, $35. Jim Barrie, Ext. 57-451.

SABER SAW: 1/3 hp Mastercraft, 1 in. stroke, 1 yr., $15. WE 5-0885, evgs.

plane
GRUMMAN
news

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For Sale

BUICK: Le Sabre, 1964, white, P/S, P/B, tinted glass, 2-dr., $400. VA 5-7845 after 5.

MINI CYCLE: '70 Bridgestone Chibi, 50cc, less than 200 orig. mi., ask. $225. MO 9-9316.

CHEVY: '66 Impala, 2-dr. hdtp., yel., blk. vinyl tp. & seats, 327 c.i., air cond., rear defog., new snows. 585-0441, after 6 p.m.

YAMAHA: '71 DT-1F, 250cc, 1,080 mi., st. driv. only, $650. HR 3-5153.

TENT TRLR.: '71 whl. camper, Gold Gate series, 12 ft. box, Mor-ryde sus., Surge hyd. bks., sol. crank-up roof, dbl. dinette, in/out stove, ice box, 11-M BTU heat., 2/20 lb. tanks, slps. 8, $1,700. PY 8-9159.

TIRES: 2 snows, Grantmaster Winter Cat 78, 4 ply tread, 2 fbgl. belts, 2 poly ply sidewall, sz. F78x14 (7.75x14), rims & bal., 2½ mo., $76. 928-1043.

SNOWS: 2, 6.86x15 stud., 2 VW rims, used 1 season. 931-4261.

SNOWS: 2 wide trk. F70x14, mtd. on rims for '70 Fordline, Merc., Thunderbird, etc., bal. of warr., used 1 season, $55. 691-2807.

SNOWS: 8.25x14 stud., mtd. on Chevy rims, under Sears warr., $45. ED 4-4703, after 5 p.m.

BATT: Sears, 42 mo. guar., 3 wk. old., $22. 928-1043.

TIRES: 4 Goodyear poly A70-13, 2 w/2,500 mi., 2 w/6,000 mi., raised whl. ltrs., $65/all. 212 293-3031.

CYL. HDS.: Rebit. for '64-'67 Cadillac, $85. 922-9338, after 6 p.m.

MISC.: Full sz. crib, blue coach carr., $25. WE 8-5389.

WASH. MACH.: Wringer, timer, $75. 281-4904.

ORGAN: Gulbransen, 2, 61 note manuals, 25 note ped. clavier, 18 rhythms, 2-spd., Leslie, under warr., wal., fin. bk., cons. lgt., all sol. state elect., 100w, $1,795. 265-4328.

GUITAR: Kapa elec. w/ampeg amp., $100. 724-7571.

ACCORDION: Ital. Muzzi, blk. & silver, mother of pearl keys, 3-switch, case, ask. $100. 265-1930.

PIANO: Upright w/bench, $50. 226-7238.

MISC.: Richelieu B-flat clarinet, $50; wrought iron base bar, wal. & cane fin., wh. formica top w/match. stools, $40; G.E. makeup mirror & elec. curler kit, $15 Dan Miller, Ext. 7067.

DRUMS: Andy K, bass w/ft. ped., fl. & std. tom toms, bass mtd. tom tom, cowbell, hi-hat std. & ped., nds. cym. Zilgen crash cym. w/sizzler star ride cym., ask. $135 or best offer. 249-8416.

VW: '64 Beetle, $475. 333-8964.

FALCON: '65 conv., $475 or best offer. JU 1-5916, after 4 p.m.

CHEVROLET: '61 panel bdy. truck. 878-2566.

HOUSE: Selden, 3 bdrm. ranch, lrg. panel eat-in-kit., full bsmt., gar., w-w, s-s, all appli., fenc., lndscpd., xtras, 5¼% mtge., $26,000. HR 3-5806.

HOUSE: Westbury, 4 bdrm. brick cape, 2 bath, w-w, 2 zone hot water heat, fin. bsmt., $39,990. 997-7861.

DISHWASH.: Sears Kenmore port. LT 9-5859.

For Sale

MISC.: 6 pc. wal. bdrm. set, $175; G.E. elec. dry., $25; 110x62 in. lined col. drapes, red bkgrnd., val., $10. 541-6940.

TV: 19 in. Admiral port., B&W, $28. PE 1-9115.

MISC.: 2 port. RCA TV, $60; 18 albums, records, classic & opera, $10. GE 3-5733.

BOAT: 18 ft. fbgl. runabout, cov., ctrls., instr., 60 hp Johnson, trlr., 100 lbs. moor., dinghy, oars, skis, xtras, $1,200. OV 1-3641, after 5 p.m.

OUTBD.: 18 hp Evinrude, access., $220. 724-4149.

MOBILE HOME: '70 Liberty, 60x12 liv. rm., dinette, kit., full bath, 2 bdrm., oil heat, ctrl. air cond., $6,800. 585-1967.

AUTO PARTS: 396 Chevy alum. hds., comp., $225; 396 Chevy eng., comp. less hds., 4 bolt mains, alum. manifold, 850 Holly dbl. pumper, Mallory dist. clutch inc., $300. 888-3169.

MARINE ENG.: 225 Gray, f.w., new bar manifolds, risers, 1.5:1 Warner transmission, new fuel pump, $200 or parts. 864-3317.

SCHNAUZER: Mini puppies, champ lines, all shots, cropped & docked. 724-3482.

CARR.: Stroller, car bd., Thayercombo, $25. 681-9588.

FURN.: Early Amer., 2 sugar bin end tbls. & 1 trestle coffee tubl. 665-0875.

FLUORES FIX.: 40w w/louvers & tubes, 2 & 4 tube type, $10/ea. PY 8-6338.

BEDS: Wh. maple bunk, ladder & safety rail., $50. 249-4067.

FURN.: Liv. rm. & 44 yds. wool broadloom rug. MO 9-2316.

FREEZER: 17 cu. ft. upright, $200. 681-5045.

SOFA: Ital. prov., avocado grn. cut velvet uphol., hand carv. import. frame, 90 in., 6 mo., $295. 212 671-8556.

SOFA: & chr., Mediterranean style, gold velvet, 2½ yr., $250. 864-8329.

BABY FURN.: Bilt-Rite carr., $25; Cosco car seat. 473-8328.

DEN TBL. SET: 5 pc., blk. wrought iron, ped. tbl., 30x30, wal. wood grain formica tp., wh. patent lea. round seats, $60. 757-2212.

PIANO: Sohmer, vert. cons., fruitwood fin., $395. AN 5-9508.

LOWERY ORGAN: 25 ped. Lincoln wood, mahog., $1,100; low. kit cab., formica tp., $10; G.E. port. ironer, $25; antique oak armoire, $80; set Funk & Wagnalls encyclopedia, copyright '51, 36 vol., $12. LI 1-1960.

MISC.: 21 in. Magnavox TV, B&W, cons. w/stereo phono & AM/FM, $90; 2 lrg. uphol. chrs., $25. 665-1981.

AIR COND.: Fedders, 7,000 BTU, fits casement wind., $35. AR 1-0170.

TENT: 9x9 Morsan best umbrella, used 4 seasons, $35. 567-1537, evgs.

HOUSE: Islip, 4 bdrm. hi-ranch, eat-in-kit., 1½ bath, din. rm., rec. rm., 2-car gar., full wall firepl., patio w/brick wall, w-w, s-s, dishwash., $35,000. 277-3768.

Road show. It's not unusual for members of Product Support's Customer Training group to take their show on the road—after all, that's where the customer is. Here, instructor Pete Panelis is shown with Lance Cpl. Chip Rodgerson, Cpl. Delano Johnson, Sgt. Clarence Guthrie, and Cpl. Ken Granger during 40-hour A-6 electrical repair course offered to Marine Air Group 14 at Cherry Point, N. C. (USMC photo)

For Sale

MISC.: Heathkit color TV, nds. minor work, $60; Eico 460 wide band scope, $50. 728-1930.

SNOWBLOWER: Sears 6 hp multi-spd. self prop., forward & reverse, under $200. HA 1-4516.

RADIO: Fisher Electra AM/FM monaural w/Garrard changer mtd. in fruitwood cons., best offer. 935-4295, after 5 p.m.

SLIDE PROJ.: Revere 888D, auto. w/remote, $25; 2 Baja TRA-1 cases w/15 slide trays, R-W 36, fit Revere, Wollensak. ED 4-7182.

HOUSE: 3 bdrm. cape, cust., w-w, panel, liv. rm. w/firepl., fin. bsmt., exp. attic, fenc. yd., 80x100, xtras, $29,000. MY 1-7536.

HOUSE: Smithtown, 6 rm. cust. ranch, formal din. rm., s-s, w-w, mirror, nite club bsmt., gar., cov. patio, xtras, $32,500. AN 5-6809.

HOUSE: Pt. Jeff Vill., 4 bdrm., firepl., 2 bath, 2 car gar., daylgt. bsmt., low tax., $45,000. 473-6428.

HOUSE: Stony Brook, 4 bdrm. cape, 2 bath, 2 car gar., $30,500. 751-7018.

HOUSE: Sayville, 3 bdrm. ranch, 35x60, fam. rm. 18x24, raised terr., eat-in-kit., din. rm., 1½ bath, fully heat. fin. bsmt., grnd. lvl. exit to yd., 2½ car gar. w/elect. dr., ½ acre w/undergrnd. sprink. sys., trout stream borders 190 ft. bk. of prop., low tax, $39,000. LT 9-1680.

HOUSE: Massapequa, sch. dist. 23, 7 rm. ranch, 3 bdrm., panel. den, eat-in-kit., full bsmt., din. rm., liv. rm. w/firepl., w-w, lrg. dbl. gar., one door radio oper., aux. gen. pwr., inst. dishwash., appli., 100x100, nr. everything, $39,990. LI 1-1960.

PROPERTY: Rio Grande estates, Albuquerque, N. Mex., ½ acre, pollution-free, cash o'low mtge. 589-4856.

MOBILE HOME: 12x60 fully furn., 3 bdrm., 1½ bath, ctrl. air cond., skirt. & patio, $2,000 & take over 31 payments of $79/mo., Orlando, Fla. ED 4-2983.

OLDS: '67 Cutlass conv., auto., pwr. steer., 6 cyl., radio. 751-4934, after 5 p.m.

PONTIAC: '67 Firebird, blue-blk. vinyl tp., 8 cyl., std. fl. shift, 2 snows on xtra whls., $1,200. 586-8864.

MUSTANG: '66 conv., orig. owner, 6 cyl., std., $500. 567-1391, after 6 p.m.

FORD: '63 Fairlane, 4-dr., 55,000 mi., $280. PY 6-1837.

MERCURY: '71 Monterey, 4-dr. sed., auto., pwr. steer. & bks., 351 CID, vinyl tp., 4,700 mi., warr. thru 8/72, $3,200. 864-5086.

STA. WAG.: '65 Chevy Impala, V-8, pwr. steer., auto., rack, new tires & batt., $700. AN 5-6809.

DUSTER: '71, wh., pwr. steer., R&H, auto., snows, ask. $2,100. 249-6739.

OLDS: '68 Cutlass conv., 4-spd., 5 synchro, stick shift, bkt. seats, cons., pwr. steer. ask. $1,500. 234-8461.

STA. WAG.: '63 Rambler, 4-dr., nds. motor job, $50. 249-4067.

VW: '70 bus, low mi., all new rubber, ask. $2,350. 273-2539.

LTD: '66, 63,000 mi., spare rim, boat trlr. hitch, $500. WA 1-1549.

For Sale

PONTIAC: '68 Firebird, 350 hp, 4-spd., disc bks., drk. blue, red int., 35,000 orig. mi., $1,400. LT 9-3145.

RAMBLER: 4 dr. Classic, auto., R&H, $100. OR 6-3263.

PLYMOUTH: '67 Fury II, 4-dr., 383 eng., auto., pwr. steer., air cond., new bks., $675. 368-8521, after 6 p.m.

DODGE: '65 Polara 500 conv., pwr. steer., bkt. seats, cons., 383 c.i., auto., $500. 735-4315.

PONTIAC: '68 GTO, std., air cond., pwr. steer., AM-FM, $1,500. 531-3619, evgs.

BOAT: '66 Glasspar, 16 ft., 55 hp '69 Evinrude elect., Navy tp., all curtains, B/B seats, 12 gal., xtras, '69 Shipmate trlr., $1,225. PE 5-6168.

BOAT: '71 Caravelle, 17 ft. fbgl. tri hull, 115 hp Johnson, full canv., xtras, used 1 season, $2,800. MO 5-4240.

BOAT: '61 Thompson, 16 ft. lapstrake, $200. 694-5807.

BOAT: 19½ ft. Amer. Finn., 80 hp Evinrude, pwr. hd., tachometer, bilge pump, xtras, $750, will sell hull or motor sep. 691-2807.

BOAT: '69 Larson Shark, 18 ft., 160 hp Mercruiser inbd./outbd., at Amity Harbor Marina. 842-1280.

GARVEY: 16 ft., gl. seams, 40 hp Evinrude, in water, $250. 676-5902.

BOAT: '60 Ulrickson, 25 ft. Sportfisherman, fly-bridge, pole holders, fish well, cush., hd., 125 hp Chrysler Crown, 3 yr., $2,400. 587-3877.

CHEVROLET: '65 sta. wag., 4-dr., 6 cyl., std., R&H, $575; '65 Midget/Sprite eng., 1098cc, clutch, $135. PY 8-4258.

OLDS: '66 Starfire, pwr. steer. & bks. & wind., air cond., ask. $1,000. 475-1985.

VW: '69 bug, 31,000 mi., auto. stick shift, lt. blue, xtra mtd. snows, ask. $1,300. 212 HI 5-9870.

CADILLAC: '67 Sed. deVille, 4-dr., full pwr., 50,000 mi., $2,200. 724-0691.

BUICK: '65 Riviera, $600 or best offer. 727-1159.

PONTIAC: '64 Catalina, 2-dr. sed., pwr. bks. & steer., $150. 543-5443, after 5 p.m.

CHRYSLER: '67, 2-dr. Newport, $695. 671-0517.

STA. WAG.: '65 Chevrolet Impala, 6 pass., V-8, std., radio, orig. owner, ask. $495. AN 5-5118, after 5:30.

BARRACUDA: '70, wh. w/blk. vinyl tp., bkt. seats, air cond., pwr. steer., radio, more, ask. $2,600. 212 779-4535.

VW: '64 Beetle, radio, inspect., $400. 864-2716.

PONTIAC: '67 Firebird, blue/blk. vinyl., 8 cyl., fl. shift, new tires & snows, $1,100. 586-8864.

MG: '68 Midget, wire whls., radial tires, tonneau cov., 46,000 mi., recent. tune up, $850. 265-1681.

GTX: '69, posi rear, pwr. disc bks., rd. whls., vinyl tp., cons., pwr. steer., 440 c.i., 375 hp, $1,700. 742-8261.

PONTIAC: '67 Firebird, 6 cyl., conv., $750. 724-5362.

DODGE: '65 cust. 880, 2-dr. hdtp., auto., 383 eng., radio, pwr. steer. & bks., $725. WE 1-3089.

TIRES: On rims, 775x14, $25/2. 732-1808.

OBITUARIES

Plane News has received word that death has come to the Grumman personnel listed below. We extend sincere sympathy to relatives and friends.

HAMILTON AMOS ARSNOW of Hydraulics, Plant 1, died February 24 at the age of 63. He had been with Grumman since 1965 and his home was at 173-13 145th Ave., Jamaica.

JAMES ROBERTSON died February 25 at the age of 59. He worked in Alodine, Plant 2, and had been with Grumman 20 years. He lived at 81 Burlington Blvd., Smithtown.

JOHN A. MAIERO of Manufacturing Inspection, Plant 4, died February 26 at the age of 62. He had been with Grumman 29 years. His home was at 26 W. Pocahontas St., Massapequa.

VINCENT B. MANDAGLIO died February 26. He was 48 years old and had just completed 20 years with the Company. His department was Preflight Finals/Systems Installation, Plant 1. He lived at 4307 Ava Rd., Bethpage.

VICTORIA MELENDEZ of Avionics Installation, Plant 33, died February 27. She was 22 years of age and had been with Grumman since 1968. Her home was at 245 Smith St., Central Islip.

HOWARD S. LANING died March 3 at the age of 60. He worked in Dispatching Work in Process, Plant 2, and had been with the Company 22 years. He lived at 337 Paumanake Ave., West Islip.

JOSEPH SCIANDRA of Wire Preparation, Plant 33, died March 4 at the age of 52. He had been with Grumman since 1966, and he lived at 305 Jefferson St., Franklin Square.

WILLIAM F. PERDUE died March 5. He was 53 years of age and had been with the Company 17 years. He worked in Facilities Maintenance, Plant 55, and his address was Route 1, Box 399C, Savannah, Ga.

GAA drive gets big boost from Plant 1 production groups

You say that March didn't roar in like a lion, that it tippy-toed in like a lamb. Baa-aaa!

There's a happy gang of sports who see it otherwise. As they look at it, these members of the GAA (Grumman Athletic Association), it roared in—and they were delighted. Mike Cherry, who's managing this year's annual fund drive, identifies the roar:

"Seven departments came crashing through with 100 percent membership in one day. That's a great pace!" And to steal a line from football, it's an outstanding kickoff.

The goal for this year's drive is 100 percent membership, having everybody pitch in just one buck—that's all it takes, just one little dollar—to help keep GAA's many programs alive, hale and hearty. And "to help" is accurate, for if every Grummanite chipped in $1 that wouldn't cover the cost of GAA's program. So the Company chips in to keep the financial boat on an even keel.

Because of that sporting gesture, it's true to say that one dollar s-t-r-e-t-c-h-e-s further than any other dollar known. And there isn't anybody in the Company unable to spend one dollar in support of a year-long program.

All together now . . . Cheeze! Plant 1 Manager Bill McLean and asst. manager Sam Aviti hold GAA 100% sign, signifying record sign-up by seven production departments on the F-14 assembly line. Shown here, accompanied by GAA commissioner at Plant 1, Lou Trapani, are members of Prototype, Sub-assembly (major), Fuselage forward, Fuselage joining, Hydraulics, Pre-flight/final, and Electrical fabrication. (Photo by Fred Annette)

Prize package. Jessie Williams of F-14 Structural Test, Plant 5, displays Polaroid automatic color Land Camera, one of 15 that will go to lucky ticket holders in GAA prize drawing. Fifty sets of Grumman glasses will also be awarded. (Photo by Bob Settles)

So, during this month of March, take a wee trip to your underground electronically protected vault, spin those knobs, let the vault door swing open, reach in and pluck out the smallest member of the U.S. Green Lettuce Society, close the vault—quickly—and clutch that buck as you get back up to the surface . . . and then give it to GAA, where they'll treat it with tender, loving care. Zounds! How proud you'll be!

What a bargain!

One thing you'll learn, instantly if not sooner, is that that dollar really is a bargain difficult, if not impossible, to beat. Yes, think of that $1 and its two-way character: Not only can it benefit you but it can help others. Honestly.

"How?" you may ask. Fair question, especially in these days of inflation and tight budgets. Well, think of it as a ticket to

- Lunch-time activities, such as table tennis, chess, handball, softball
- Hobby, art, photography, painting, and flower shows
- Intramural bowling, tennis, softball, basketball, paddle ball, pocket billiards, men's and women's golf
- Professional games and foreign flights at reduced fares
- Sanctioned clubs of many types—Antique and Sports Car Club, Astronomical Society, Coin Club, Ex-Service Men's Club, Garden Forum, Amateur Radio Club, Pure Breed Dog Club, Society of Logistic Engineers . . . and many more you'll see listed in Plane News' Calendar of Events

Company support

And your buck is the entry slip to any or all of these Company-recognized activities. A bargain to end all bargains!

What's left out are Company-supported varsity teams such as basketball, bowling, golf, and soccer squads. The Company foots the bill for those.

It's a can't-miss deal. On top of all of that, there are prizes to be given away April 7 to the lucky holders of tickets drawn from the big drum. So it's possible that your dollar contribution will turn into even more than you thought. On the prize list are 15 automatic Polaroid cameras and 50 sets of Grumman glasses.

"By the way," says Cherry, "if any area hasn't received its tickets just call us on extension 2133."

Name Bussolini to head engineering administration

Jake Bussolini, director of Engineering Operations, has been appointed director of Administrative Operations for the following departments: Product Engineering, Product Support, Materials & Processes, Research, and Product Development. He will report to Senior Vice President Grant Hedrick, who is director of Technical Operations. This is the second major step taken by Hedrick to streamline his technical organization—the first being the recent reorganization of the Product Engineering Department.

Jake Bussolini

The areas of procedures, finance, budgets and resources, wages and salary, and secretarial services, to name a few, will now have a single organizational element common to all five departments, Bussolini explained. "In expanding over the years, each department had established its own identity and its own manner of dealing with people, resources and procedures. Then, in shrinking, a movement of personnel among the five departments has demonstrated the need to standardize operating practices and controls."

Bussolini was for three years chief of Reliability & Maintainability, which he left to work on Hedrick's staff. He was named manager of Operations in 1969 and in 1970 became director of Engineering Operations, reporting to Vice President George Skurla. He is still actively interested in Reliability and under NATO auspices lectured on the subject in Europe last year. He gives lectures for the American Management Association's courses and is active in that organization.

Bussolini is a graduate of Norwich University, Class of '58. His office is in Plant 5, Ext. 1105.

Presentations on the move in Plant 5

Because of the high cost of living, hiring a guide to lead you to the new Presentations area in Plant 5 may be prohibitive; consequently, we offer this advice to all Grumman employees seeking to visit Presentations: You don't need a guide, just keep your eye on the ball—the "blue ball" that is. For Presentations is now located directly beneath that well-known Long Island landmark.

So if you're coming to Plant 5, park behind the plant (the side facing South Oyster Bay Road) and enter by the door below the blue ball. Follow the arrows up for three flights and you'll be in Presentationsville. For those already in Plant 5 (or for those entering by the front lobby), it can be reached from any point on the engineering floor by simply heading for that corner (over the cafeteria) closest to Plant 25, going through the exit door, and following the arrows to Presentations. If you're not sure you're by the right exit door, just look out of the window: If you're almost directly in line with the side entrance to Plant 25, then you're in the right place. If all else fails, call Ext. 2377 for a guide.